

REMARKS

This paper is being provided in response to the March 17, 2005 Office Action for the above-referenced application.

The rejection of Claims 9 and 26 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,108,683 to Kamada et al. (hereinafter “Kamada”) is hereby traversed and reconsideration thereof is respectfully requested for reasons set forth in detail below.

Claim 9 recites a method of scheduling tasks in a multitasking operating system. The method includes choosing a particular scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing a particular scheduler is based on parameters that vary according to run time conditions, and running the particular scheduler to schedule tasks.

Claim 26 recites computer software in combination with a computer readable medium that schedules tasks in a multitasking operating system. The software includes executable code, provided on a computer readable medium, that chooses the particular scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing a particular scheduler is based on parameters that vary according to run time conditions, and executable code, provided on a computer readable medium, that runs the particular scheduler to schedule tasks.

Kamada discloses a computer-system fixed-priority process scheduler that is supported by an operating system and that establishes fixed priorities respectively corresponding to a plurality of processes to be scheduled. Kamada discloses embodiments in Figure 2 and Figure 5 which indicates the possibility that there may be more than one scheduler. In the case of Figure 2, Kamada teaches that the user-level process scheduler operating at the priority of 159 is divided into two schedulers, namely, the user-level process schedulers 10-1 and 10-2. For Figure 5, Kamada indicates pretty much the same thing, that the user-level process scheduler operating at the priority of 159 is divided into two schedulers, namely, the user-level process schedulers 10-1 and 10-2.

Column 7, lines 1-40 of Kamada disclose changing the priority of processes scheduled by the scheduler and how to swap tasks scheduled by a scheduler. There is no mention in column 7, lines 1-40 of multiple schedulers and, in fact, all instances of scheduler set forth in column 7, lines 1-40, are singular, thus indicating that only one scheduler is being discussed.

Column 11, lines 21-37 mention multiple schedulers and states:

FIG. 5 illustrates yet another example of (the operating environment of) a user-level process scheduler of the present invention. A characteristic aspect of this example resides in that there are provided a plurality of systems (namely, a plurality of schedulers, each of which is equivalent to the example of the user-level process scheduler of FIG. 1) correspondingly to the real time class. Namely, there are provided two user-level process schedulers 10-1 and 10-2 which operate at the priority of 159 of the real time class. Moreover, a group of the user processes 12-1

and 12-2 and another group of the user processes 12-3 and 12-4 (incidentally, the user processes 12-1 to 12-4 operate at the priority of 158) are respectively provided as user process groups 11-1 and 11-2 which are objects of the scheduling. In the case of this example, the user-level process scheduler 10-1 performs the scheduling of the user processes 12-1 and 12-2. Further, the user-level process scheduler 10-2 performs the scheduling of the user processes 12-3 and 12-4.

Lines 37-40 go on to state:

Needless to say, FIG. 5 illustrates the case that there are two user-level process schedulers 10-1 and 10-2 in the operating system. However, if necessary, there can be provided user-level process schedulers of an arbitrary number.

There is no discussion in the excerpts above relating to choosing between the schedulers 10-1, 10-2 or using any criteria whatsoever (including run time conditions) to choose between the schedulers 10-1, 10-2. Rather, the discussion above simply illustrates that there can be more than one scheduler, each of which schedules its own set of user processes (e.g., the scheduler 10-1 schedules user processes 12-1 and 12-2 while the scheduler 10-2 schedules user processes 12-3 and 12-4).

In addition, all of the figures of Kamada that illustrate more than one scheduler show appear to show the schedulers operating concurrently in memory. See, for example, figure 2 and figure 5. This is consistent with the description in Kamada, which does not appear to distinguish between the schedulers or discuss how to choose or prioritize between the schedulers. Said differently, there is no choice to be made between the schedulers of Kamada because the plurality of schedulers appear to be operating concurrently.

Applicants respectfully submit that Kamada does not show, teach, or suggest a feature of the present claimed invention, as recited in claims 9 and 26, where choosing the particular scheduler that is swapped in is based on parameters that vary according to run time conditions. This claimed feature is described in Applicants' specification, and relates to the ability to swap in different schedulers depending on run time conditions. This is not disclosed in Kamada at all and, in fact, Kamada does not appear to include any teaching or suggestion of any mechanism for choosing a particular one of the plurality of schedulers he discloses let alone what criteria would be used for any sort of selection. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The rejection of Claims 1-3, 5-8, 10-14, 16-20, 22-25, and 27-31, 33, and 34 under 35 U.S.C. 103(a) as being unpatentable over Kamada and further in view of U.S. Patent No. 5,630,130 to Perotto (hereinafter "Perotto") is hereby traversed and reconsideration thereof is respectfully requested for reasons set forth in detail below.

Claim 1 recites a method of providing a particular scheduler for a multitasking system for a processor. The method includes choosing the particular scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing a particular scheduler is based on parameters that vary according to run time conditions, setting a program counter to an address corresponding to code of the

particular scheduler, and the processor executing code at an address corresponding to the program counter. Claims 2, 3, and 5-8 depend directly or indirectly from claim 1.

Claims 10-14, 16, and 17 depend directly or indirectly from Claim 9, discussed above.

Claim 18 recites computer software in combination with a computer readable medium that provides a particular scheduler for a multitasking system for a processor. The software includes executable code, provided on a computer readable medium, that chooses the particular scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where executable code chooses a particular scheduler using parameters that vary according to run time conditions, executable code, provided on a computer readable medium, that sets a program counter to an address corresponding to code of the particular scheduler; and executable code, provided on a computer readable medium, that causes the processor to execute code at an address corresponding to the program counter. Claims 19, 20, and 22-24 depend directly or indirectly from claim 18.

Claims 27-31, 33, and 34 depend directly or indirectly from Claim 26, discussed above.

Kamada is discussed above.

Perotto discloses a multitasking controller having task storage means (2) for storing up to N tasks (P0,P1,P2,P3) where each task comprises a sequence of instructions. The controller also includes a microprocessor for processing, by time-sharing, a plurality of such N tasks, and a random access memory (12) for storing variable data created and used by said microprocessor. The microprocessor further includes a scheduler (7) realized in hardware for controlling the use of the microprocessor or by such processes, and program counter storage means for storing N program counters (Pc0,Pc1,Pc2,Pc3) each for use by the scheduler (7), which is able select a different one of the program counters (Pc0,Pc1,Pc2,Pc3) when the task processed by the microprocessor is changed without the transfer of data from the random access memory (12).

Applicants respectfully submit that all of the independent claims of the present application, Claims 1, 9, 18, and 26 all recite some form of choosing a particular scheduler from a plurality of schedulers based on parameters that vary according to run time conditions. As discussed above with respect to the rejection of claims 9 and 26 under 35 U.S.C. 102(b), Kamada, by itself, does not show, teach, or suggest this feature because, even if Kamada discloses multiple schedulers, there does not appear to be any disclosure in Kamada relating to choosing any *particular* scheduler or how this would be done and what criteria would be used.

In addition, the deficiencies of Kamada are not overcome by the addition of Perotto, especially since Perotto discloses a *single* scheduler that schedules one of the

four disclosed tasks (P0, P1, P2, P3). None of the tasks P0, P1, P2, or P3 of Perotto are themselves schedulers and all of Applicants' independent claims specifically recite some form of the schedulers being different from the tasks scheduled by the schedulers. Since Perotto only discloses a single scheduler, Perotto (like Kamada) can not show, teach, or suggest a recited feature of the present claimed invention relating to choosing a particular scheduler from a plurality of schedulers, where the choice is based on parameters that vary according to run time conditions.

Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

April 22, 2005

Date

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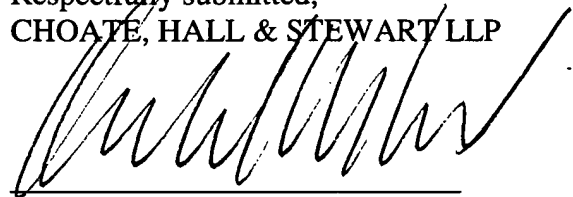
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